**Zadanie 5. Podróże pociągiem**

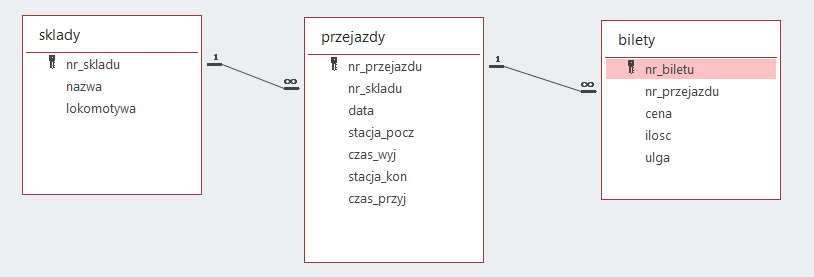
W pewnej miejscowości na dworcu kolejowym zainstalowano samoobsługowy terminal, za pomocą którego podróżny może kupić bilet. Terminal automatycznie po transakcji drukuje bilet. Informacje o dokonanych zakupach zapisywane są w bazie danych złożonej z trzech tabel.

Tabela sklady(nr\_skladu, nazwa, lokomotywa) zawiera informacje o kursujących składach pociągów: numer składu, nazwa składu ( oraz model lokomotywy.

Tabela przejazdy(nr\_przejazdu, nr\_skladu, data, stacja\_pocz, czas\_wyj, stacja\_kon, czas\_przyj) zawiera informacje o istniejących w rozkładzie jazdy przejazdach: identyfikator przejazdu, numer składu, za pomocą którego przejazd jest realizowany, dzień przejazdu, nazwa stacji początkowej, czas wyjazdu ze stacji początkowej, nazwa stacji końcowej i czas przyjazdu do stacji końcowej.

Tabela bilety(nr\_biletu, nr\_przejazdu, cena, ilosc, ulga) zawiera informacje o sprzedanych biletach: numer biletu, numer przejazdu, cena podstawowa bez zniżek, liczba biletów, ulga w punktach procentowych. W trakcie sprzedaży cena podstawowa jest pomniejszana o ulgę.

Między tabelami w bazie danych zawiązano następujące relacje:



Zawartości tabel zostały zapisane w plikach tekstowych, których nazwy odpowiadają nazwom tabel.

**sklady.txt**

nr\_skladu;nazwa;lokomotywa

101;Bachus;EP-07

102;Zefir;EP-09

103;Cegielski;EP-09

104;Malczewski;EP-09

105;Barbakan;EP-07

106;Berolina;Husarz

107;Berolina;Husarz

108;Powstaniec Wielkopolski;EP-09

109;Szklarka;EP-09

110;Hetman;Pendolino

**przejazdy.txt**

nr\_przejazdu;nr\_skladu;data;stacja\_pocz;czas\_wyj;stacja\_kon;czas\_przyj

501;104;15.07.2022;Warszawa Wschodnia;08:12:00;Berlin Hauptbahnhof;14:55:00

502;106;15.07.2022;Warszawa Wschodnia;16:10:00;Berlin Hauptbahnhof;20:55:00

503;109;15.07.2022;Gdynia;03:12:00;Jelenia Gora;13:12:00

504;108;16.7.2022;Konin;05:12:00;Poznan;07:12:00

505;108;16.7.2022;Poznan;12:12:00;Konin;16:44:00

506;105;17.07.2022;Katowice;06:12:00;Gdynia;14:55:00

507;103;17.07.2022;Poznan;08:10:00;Katowice;12:40:00

508;101;18.07.2022;Poznan;05:12:00;Zielona Gora;08:12:00

509;102;18.7.2022;Katowice;07:12:00;Gdynia;14:12:00

510;108;18.7.2022;Poznan;12:12:00;Konin;16:44:00

**bilety.txt**

nr\_biletu;nr\_przejazdu;cena;ilosc;ulga

2001;501;180;1;0,33

2002;501;180;2;0

2003;502;69;1;0,33

2004;502;69;2;0

2005;503;180;2;0

2006;504;32;10;0

2007;506;120;1;0,33

2008;504;32;1;0,33

2009;509;180;1;0

2010;503;180;1;0,33

2011;504;32;2;0

2012;509;180;1;0,33

2013;504;32;2;0

2014;505;32;1;0,33

2015;506;120;1;0,33

**Zadanie 5.1**

Które składy pociągów nie wyjechały? (nie były używane w żadnym przejeździe)

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**Zadanie 5.2**

Napisz zapytanie, które wyświetli, posortowaną malejąco według ilości, numery biletów na przejazd o numerze 504

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**Zadanie 5.3**

Ile modeli lokomotyw znajduje się w składach pociągów?

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**Zadanie 5.4**

Podaj numer przejazdu, w którym łączna kwota zakupionych biletów na ten przejazd jest największa. Pamiętaj o uwzględnieniu wszystkich liczby osób na bilecie i ewentualnie zastosowane ulgi.

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**Zadanie 5.5**

Z której stacji początkowej wyjechało najwięcej pasażerów, biorąc pod uwagę wszystkie przejazdy.

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**Zadanie 5.6**

Podaj numer przejazdu na najkrótszym czasie podróży od stacji początkowej do stacji końcowej, oraz numer przejazdu o najdłuższym czasie podróży.

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**Zadanie 5.7**

Podaj numery przejazdów, na które nikt nie kupił biletu.

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**Zadanie 5.8**

Który model lokomotywy, i w którym dniu, był najczęściej wykorzystywany?

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